

IV. REMARKS

Status of the Claims

Claims 1,2, 7-9, 12, and 13 are amended. New claims 14-28 are added. Claims 1-28 are presented for further consideration.

Summary of the Office Action

Claims 1-10, 12 and 13 stand rejected under 35USC102(e) on the basis of the cited reference Lebens, et al, U.S. Patent No. 6,095,661. Claim 11 stands rejected under 35USC103(a) based on the cited reference Lebens. The Examiner is respectfully requested to reconsider his rejection in view of the above amendments and the following remarks.

Discussion of the Cited Reference

The Examiner has cited the reference Lebens in support of the rejection based on anticipation and in sole support of the reject of claim 11 based on obviousness. The system of Lebens relates to a flashlight in which a number of LEDs (light emitting diodes) are used as the source of illumination. In certain embodiments, the flashlight includes a power source such as a battery and a control circuit that is designed to maintain a predetermined light output level from the LEDs as the charge on a battery decreases (see abstract, for example). In some embodiments, the control circuit maintains the light output level by increasing a pulse width or a pulse frequency as the charge of the battery decreases (column 2, lines 24 to 31). In other embodiments, the control circuit is arranged to maintain a predetermined light output colour spectrum as the voltage of the power source varies (column 4, lines 23 to 44) or is adapted to adjust the colour spectrum of the light output by the LEDs (column 4, lines 45 to 51).

In certain embodiments, the flashlight is used as an illumination source for a video camera and includes a feedback circuit coupled to the control circuit that provides a feedback signal for adjusting the light output by the LEDs in order to optimize the video signal (column 9, lines 52 to 56).

One application of the feedback circuit is to synchronise the light output by the LEDs to coincide with the light gathering periods of the video camera (column 9, lines 56 to 61), while another is to control or maintain the white balance of the light emitted by the LEDs (column 9, lines 61 to 66 and column 12, lines 1 to 4).

In a particular embodiment in which the white balance of the LEDs is maintained / controlled, the feedback circuit measures the colour balance of the video output signal and provides separate feedback intensity control for each of a plurality of (e.g. two or three) separate groups of colour LEDs, for example red, green and blue (column 9, lines 61 to 66).

In another embodiment, a single wide-spectrum feedback detector is used to separately adjust each of the colours of output LED light (column 15, lines 21 to 25).

The Invention

Unlike Lebens, the invention disclosed and claimed in the present application does not concern the control (adjustment of intensity or colour) of an LED light source, but, instead, relates to the measurement of illumination conditions by using light emitting diodes. In particular it relates to the measurement of the intensity of components of light corresponding to different colours.

As explained in the present application (page 7, line 26 to page 8, line 6), this is possible because LEDs not only emit light in a narrow frequency band when driven in forward bias by a voltage source, but also exhibit a response to incident light within a narrow frequency band when connected in reverse bias. More specifically, an embodiment of the present invention introduces the use of one or more LEDs in a white balance measurement unit where the narrow-band response of an LED to incident light is utilised to generate a measurement signal representative of the intensity of a light component.

It should be noted that while US 6,095,661 teaches incorporation of an LED flashlight into a video camera device and controlling the colour of light by the flashlight by means of a feedback circuit incorporating a colour balance measurement unit (column 9, lines 61 to 66) it does not teach or suggest in any way that an LED having a narrow-band response to incident light can be used to measure light intensity. At column 5, lines 63-66, Lebens discusses an embodiment that uses a light sensing device as follows:

"In another embodiment, the present invention uses a light-sensing device such as a light-sensing transistor or light-detecting diode (LDD) in proximity to the output LED(s) to measure the average brightness and further regulate the LEDs' output."

Clearly Lebens considers the sensing device separate from the output LED'S and therefore, teaches away from the claimed concept. There is no teaching in Lebens that anticipates or renders obvious the invention, as claimed in this application. While the Applicant considers this difference sufficient to render the present invention patentable with respect to the disclosure of US 6,095,661 without any need to amend the claims, the claims of the present invention have nevertheless been amended to clarify the subject matter for which protection is sought.

The Issue of Anticipation

It is well settled that a claim is anticipated, "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (See CHISOLM, Federal Circuit Guide, Pg. 1221).

"...it must be shown that the reference contains all of the elements of the claims apart from irrelevant or merely extraneous variations, and the elements are arranged in the same way to achieve the same result which is asserted to be an inventive function..." 454 U.S. 1129 (1981)

The elements of the claim and their function and purpose within the claim must be reviewed in a manner similar to an

infringement analysis. If the device described in the cited reference would not infringe if it was later, it will not anticipate if the reference is earlier.

Applying this standard to the system of the reference Lebens, it becomes clear that the system of Lebens is missing significant elements of the independent claims. There is no provision in Lebens for measuring illumination intensity with an LED. Claim 1 states:

"at least one LED that has a response to a predetermined frequency band corresponding to one of said light components and which is arranged to generate an electronic measurement signal representative of the intensity of said one of said light components."

Equivalent language also is contained in the remaining independent claims. Since these elements form no part of the system of Lebens, there would be no infringement, if Lebens was later, therefore, the cited reference does not support the rejection by the Examiner based on anticipation.

The above arguments are equally applicable to the rejected dependent claims.

With respect to the issue of obviousness raised by the Examiner with respect to claim 11, Applicant submits that because of the deficiencies of the reference Lebens described above, it fails to support a prima facie case of obviousness with respect to claim 11.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$1740.00 is enclosed for a three month extension of time and additional claim fees. The

Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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